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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,234	10/07/2005	Kenichiro Fujimoto	186961/US/2-465122-00015	2045

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DORSEY & WHITNEY LLP
INTELLECTUAL PROPERTY DEPARTMENT
250 PARK AVENUE
NEW YORK, NY 10177

EXAMINER	
HEVEY, JOHN A	

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,234	FUJIMOTO ET AL.	
	Examiner	Art Unit	
	JOHN A. HEVEY	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-27,42,43,73 and 74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-27,42,43,73 and 74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 73 and 74 are new, claims 14-15 and 42-43 have been amended. Claims 14-27, 42-43, 56-74 are pending, claims 56-72 withdrawn as being directed to non-elected subject matter.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 14-27 and 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frampton (US3969274, of record).

In regards to claims 14-15, Frampton teaches a catalyst comprising an active catalytic material and a preformed support, wherein the active catalytic material is a metal, salt , oxide, acid, alloy, or heteropolyacid of an element of Groups IB, IIB, IVB, V, VIB, VIIB and VIII of the Periodic Table of Elements and

where the support is a steam treated silica xerogel (see Frampton Claim 1). The reference specifically teachings the use of the following as active catalytic materials: Cu, Ag, Au, Zn, Cd, Hg, Ti, BI, SB, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Re, N, P, As, Fe, Co, Ni, Ru, Os, Ir, Rh, Pd, and Pt (see Frampton column 4, lines 40-52). Frampton further teaches the xerogel support to have a composition of SiO_2 over 99 wt%, Fe_2O_3 0.01-0.03 wt%, Na_2O 0.02-0.09 wt%, and Al_2O_3 less than 0.4 wt% (see Frampton claim 2). Thus, Frampton teaches a catalyst comprising 0.02-0.09 wt% (equivalent to mass%) of an alkali metal.

It would have been obvious to one of ordinary skill in the art to select from the portion of the overlapping compositional ranges. Overlapping ranges have been held to establish prima facie obviousness (see MPEP 2144.05). It would have been further obvious to one of ordinary skill in the art to select cobalt (Group VIII metal) as a catalytic material from the disclosed teachings.

In regards to the limitation "for producing hydrocarbon from a syngas in a slurry bed", this is considered a statement of intended use. While intended use recitations cannot be entirely disregarded, the intended use must result in a structural difference between the claimed invention and the prior art in order to distinguish the claimed invention over the prior art. The prior art in this case, teaches a catalyst useful for the production of hydrocarbons (see col 4, ln 53-68) and therefore meets the instant claims.

In regards to claims 16-17, Frampton teaches the xerogel support to have a pore volume of 0.4-2.2 mL/g, surface area 20-800 m^2/g (see Frampton claim 2)

and a specific example of a silica xerogel support having an average pore diameter of 12 nm, pore volume of 1.04 mL/g, and surface area of 350 m^2/g (see Frampton example 1). It would have been obvious to one of ordinary skill in the art to select from the portion of the overlapping ranges. Overlapping ranges have been held to establish prima facie obviousness (see MPEP 2144.05).

In regards to claims 18-20, as Frampton teaches a catalyst with substantially the same composition and structure (see above), it would necessarily follow that it possess the same properties as instantly claimed.

Claims 21-27 further require the support to be silica with a spherical shape. Frampton teaches the silica gel support made of elementary silica particles having roughly spherical shape (see Frampton column 6, lines 15-18).

In regards to claims 73-74, as Frampton teaches a catalyst with substantially the same composition and structure (see above), it would necessarily follow that it possess the same properties as instantly claimed.

4. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frampton (US3969274, of record) in view of Fiato et al. (US4544674).

In regards to claims 42-43, teaches adding a group VIII metal in the form of a precursor comprising an alkali metal (col 5, ln 10-60), but does not specifically teach cobalt added in a the form of a cobalt precursor containing at most 5% alkali or alkaline-earth metal.

Fiato teaches the formation of a catalyst comprising a precursor solution of cobalt, iron (Group VIII metals) and 1% potassium (alkali metal) (see col 7, ln 53-60).

It would have been obvious to one of ordinary skill in the art to modify the teachings of Frampton to select a precursor solution comprising cobalt and 1% potassium as taught by Fiato, in order to enhance the catalytic activity of the material, and increase the industrial applicability of the invention.

5. Claims 14-15, 18-19, 21-22 and 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheffer et al. (US5073661).

In regards to claims 14-15, Scheffer teaches a catalyst for the preparation of hydrocarbons, comprising a porous carrier material selected from silica, alumina and mixtures thereof, cobalt, and a promoter such as magnesium (see col 2, ln 28-38). Scheffer teaches the addition of 3-300 parts by weight of cobalt and 0.01-100 parts per weight promoter per 100 parts by weight carrier material (see col 2, ln 49-63). Thus, the reference teaches a catalyst comprising compositional ranges which overlap with the instant claims. It would have been obvious to one of ordinary skill in the art to select from the portion of the overlapping compositional ranges. Overlapping ranges have been held to establish prima facie obviousness (see MPEP 2144.05).

In regards to the limitation “for producing hydrocarbon from a syngas in a slurry bed”, this is considered a statement of intended use. While intended use

recitations cannot be entirely disregarded, the intended use must result in a structural difference between the claimed invention and the prior art in order to distinguish the claimed invention over the prior art. The prior art in this case, teaches a catalyst useful for the production of hydrocarbons and therefore meets the instant claims.

In regards to claims 18-19, as Scheffer teaches a catalyst with substantially the same composition and structure (see above), it would necessarily follow that it possess the same properties as instantly claimed.

Claims 21-22 further require the support to be silica with a spherical shape. Scheffer teaches a spherical silica support (see col 5, ln 19-21).

In regards to claims 73-74, as Scheffer teaches a catalyst with substantially the same composition and structure (see above), it would necessarily follow that it possess the same properties as instantly claimed.

6. Claims 16-17, 20, 23-24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheffer as applied to claims 14 and 15 above, and further in view of Frampton (US3969274, of record).

In regards to claims 16-17, Scheffer teaches a catalyst with a support comprising spherical silica, alumina, or mixtures thereof but does not teach the average surface or porosity of the support.

Frampton teaches a catalyst comprising a Group VIII and silica support made up of elementary spherical particles, having a pore volume of 0.4-2.2 mL/g,

surface area 20-800 m^2/g (see Frampton claim 2) and a specific example of a silica xerogel support having an average pore diameter of 12 nm, pore volume of 1.04 mL/g, and surface area of 350 m^2/g (see Frampton example 1).

It would have been obvious to one of ordinary skill in the art to substitute the support as taught by Scheffer with that taught by Frampton in order to enhance the porosity and catalytic activity of the invention, thus increasing the industrial applicability of the invention. It would have further been obvious to one of ordinary skill in the art to select from the portion of the overlapping ranges. Overlapping ranges have been held to establish prima facie obviousness (see MPEP 2144.05)

In regards to claim 20, as the references teach a catalyst with substantially the same composition and structure, it would necessary follow that it possess the same properties as instantly claimed.

Claims 23-24 and 27, Scheffer and Frampton teach a support consisting of elementary spherical particles (see above).

Response to Arguments

7. Applicant's arguments with respect to claims 14-27, 42-43, 73-74 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant argues that Frampton does not teach a catalyst comprising 0.01-0.07 mass% alkali metal or alkaline earth metal. This is not found persuasive. Frampton teaches a compositional range in weight% (equivalent to mass%, see details in rejection

above) which clearly overlaps with the instantly claimed ranges. Thus, it would have been obvious to one of ordinary skill in the art to select from the portion of the overlapping ranges. Overlapping ranges have been held to establish prima facie obviousness (see MPEP 2144.05).

9. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., reaction activity, CO conversion) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

10. Applicant argues that Frampton does not teach a pulverized or fracture ratio of at most 10%. This is not found persuasive. Frampton in view of Sano teach a catalyst with substantially the same composition and properties as instantly claimed. It would therefore necessarily follow that the catalyst as taught by Frampton in view of Sano would also possess this property. Furthermore, it would have been obvious to one of ordinary skill in the art to optimize the conditions of such a treatment in order to produce a fractured or pulverized ratio as instantly claimed.

11. Finally, applicant argues that Frampton does not disclose the further addition of one selected from iron, cobalt, nickel and ruthenium. This is not found persuasive. Frampton teaches the addition of a catalytic material from Group VIII, including iron, cobalt, nickel and ruthenium.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN A. HEVEY whose telephone number is (571)270-3594. The examiner can normally be reached on Monday - Friday 8:00 AM to 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. H./
Examiner, Art Unit 1793

/Kevin P. Kerns/
Primary Examiner, Art Unit 1793